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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/194,112	11/23/1998	MASAHIDE ONUKI	229-532PCT	2812

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EXAMINER

BLAU, STEPHEN LUTHER

ART UNIT	PAPER NUMBER
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3711

DATE MAILED: 04/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/194,112

Applicant(s)

ONUKE ET AL.

Examiner

Stephen L. Blau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Request for Continued Examination

1. The request filed on 6 March 2002 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 09/194,112 is acceptable and a RCE has been established. An action on the RCE follows.

Claim Rejections - 35 USC ' 112

2. The change to claim 26 is agreed to and the rejection under 35 U.S.C. 112, second paragraph, is removed.

Claim Rejections - 35 USC ' 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 21, 23-25, and 30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Peker.

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Peker discloses a golf club head having a hitting face formed of a metallic amorphous metal, an amorphous alloy of zirconium base, Ni, Al, Cu, Hf, tensile strength 1.9 GPa (194 kgf/mm²) (Col. 4 Lns. 12-43), a material meeting the formula $M(a)X(b)$ with $65 \leq a \leq 100$ and $0 \leq b \leq 35$ in the form of M(Zr/Ti/Be/Cu/Ni) of 100 (Col. 4, Lns. 13-16), a material meeting the formula $Zr(c)M(d)X(e)$ with $20 \leq c \leq 80$, $20 \leq d \leq 80$, and $0 \leq e \leq 35$ in the form of Zr of 41.2, M(Ti/Be/Cu/Ni) of 58.8, and X(Hf) of 0 (Col. 4, Lns. 23-27), and material meeting the formula $Zr(c)M(d)X(e)$ with $50 \leq c \leq 75$, $25 \leq d \leq 50$, and $0 \leq e \leq 1$ in the form Zr of 60, M(Al/Ni) of 40 and X(Hf) of 0 (Col. 4, Lns. 39-43). Clearly the hitting face material has a Young's modulus and a hardness and one skilled in the art in manufacturing a hard face with mixtures of elements of Zr/Ti/Be/Cu/Ni/Hf would have selected a composition having a suitable Young's modulus and tensile strength in which Young's modulus and tensile strength meets the relationships in claim 30, a Young's modulus of 5,000 to 10,000 kgf/mm², and a tensile strength of 105 to 175 kgf/mm² are included.

The difference between the claims and Peker is that Peker does not disclose a Young's modulus of 5,000 to 10,000 kgf/mm², a tensile strength of 105 to 175 kgf/mm², a relationship between Young's modulus and tensile strength as defined by claim 30.

It would have been obvious to modify the face of Peker to have a Young's modulus and tensile strength as defined by the claims in order to have face which has a sufficient flex for a specific golfer.

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5. Claims 1-20, 22, 26-29 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peker as applied to claims 21, 23-25, and 30 above, and further in view of Kobayashi.

Clearly the hitting face material of Peker has a Young's modulus and a hardness and one skilled in the art in manufacturing a hard face with mixtures of elements of Zr/Ti/Be/Cu/Ni/Hf would have selected a composition having a suitable hardness and Young's modulus in which a hardness and Young's modulus which meets the relationship in claim 5 and a Vickers hardness of 400 to 1,000 HV are included.

Peker lacks a hitting face having at least partially a hitting portion which consists of a metallic material with a thickness of 1 to 3 mm, a back of a hitting portion being not supported by a support member, a Vickers hardness of 400 to 1,000 HV, and a relationship of Young's modulus and hardness as defined by claim 5.

Kobayashi discloses a head having a face made of a metallic alloy with a thickness being 2-3 mm (Claim 2) and a head wherein a back of a hitting portion is not supported by a support member (Fig. 7) in order to have a larger sweet area without damaging a strength of a head (Abstract). In view of the patent of Kobayashi it would have been obvious to modify the head of Peker to have a hitting face having at least partially a hitting portion which consists of a metallic material with a thickness of 2 to 3 mm and to have a back of a hitting portion being not supported by a support member in order to have a larger sweet area without damaging a strength of a head.

In addition, it would have been obvious to have a Vickers hardness of 400 to 1,000 HV, and a relationship of Young' modulus and hardness as defined by claim 5 in order to have a face which maximizes the transfer of energy to a ball at impact.

Response to Arguments

6. The argument that it is improper to use the patent of Peker since the prior art reference did not teach or suggest all the claim limitations is disagreed with.

Obviousness can be established to modify the teaching of prior art to produce the claimed invention by motivation in the knowledge generally available to one of ordinary skill in the art (In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). In addition, inherent teaching of a prior art reference may be relied upon in a rejection (In re Napier, 55 F.3d 610,613,34 USPQ2d 1782,1784 (Fed. Cir. 1995). Peker discloses the alloys which meet the percentages as defined in the claims (Claims 14-19). Clearly the face of Peker will have inherent properties as Young=s modulus, tensile strength and hardness. Since the material of Peker is substantially the same as the material claimed by the applicant in composition, it would be obvious to have the face of Peker having substantially the same properties as claimed. In addition, these properties would be suitable selections for one skilled in the art to meet the needs of a specific golfer out of the numerous different types of golfers with different needs. In addition, Peker discloses a value of tensile strength which is outside of the claimed range in claims 1 and 5 but it was for a preferred composition. Peker leaves room for different

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percentages of the material which makes up the composition (Col. 4, Lns. 12-22, 32-44) and a composition having a tensile strength as claimed in claims 1 and 5 (Table 1) is a suitable selection. In addition, the head of Peker itself will have a face insert thickness (Fig. 5A). 2-3 mm is a suitable selection for a face insert. The argument that Peker does not disclose the same composition as shown in table 2 is disagree with. Peker clearly discloses some compositions with all the elements in table 2 (Ex. 1, 2, 11, and 8, Zr, Hf, Ni, Cu and Al) with ranges, combinations and substitutions which would allow the same percentages of elements for some of those compositions listed in table 2 (Col. 4, Lns. 33-39). The characteristics as claimed are desirable characteristics for a face of a golf club head and an artisan skilled in the art would have combined the elements with the claimed percentages in order to achieve the claimed characteristics.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Blau whose telephone number is (703) 308-2712. The examiner is available Monday through Friday from 8 a.m. to 4:30 p.m.. If the examiner is unavailable you can contact his supervisor Jeanette Chapman whose telephone number is (703) 308-1310. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0858.

Stephen Blau
Stephen Blau
examiner
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